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## EUROPEAN PATENT APPLICATION

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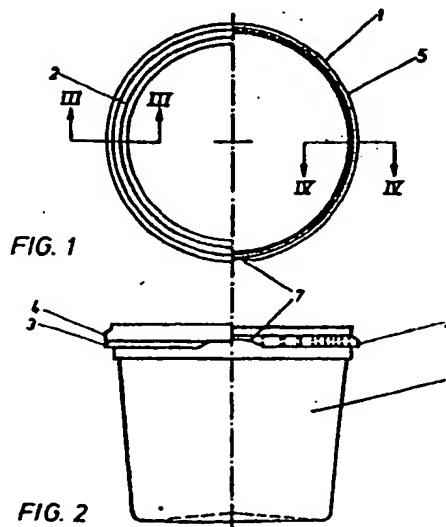
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⑳ Plastic container and closure therefor.

㉑ A plastic container (1) can be supplied with a circumferential buttress (3) whose top side is outwardly inclined, and whose outer part extends parallel to the side of the container. The buttress (3) is placed in such a manner that it just covers the lower side of the shoulder (4) of the closure (2), which shoulder acts as lifting off edge when the closure is to be removed from the container.

A recess (7) gives access to the shoulder (4) and consequently to the closure (2). Moreover, ribs (5) are provided between the buttress (3) and the container (1).

Hereby the buttress (3) serves the purpose of providing permanent protection against unintentional lifting off of the closure and against any side impacts, and at the same time it works as drip edge for any overflow. Add to this that the buttress (3) serves as support for the container which thereby becomes easier to apply and hence requires less material, since the dimensions can be reduced.



## Description

## PLASTIC CONTAINER AND CLOSURE THEREFOR.

The present invention relates to a plastic container and closure therefor, whose outer rim has a resilient shoulder extending around the upper edge of the container, and which has an inner circumferential projection which can engage and squeeze around an outer circumferential projection on the upper edge of the container, and where a round member extends along the outside of the container below the shoulder, which member protrudes and covers the bottom side of the shoulder.

Containers of this sort are widely applied for packing dry as well as liquid food, chemicals and the like. The closure fits tightly to the container and it may be removed and put back on several times without reducing the sealing quality. Moreover, the container is well suited for mass production and it may be piled one on another thereby taking up least possible room during storing, in its empty as well as in its filled condition.

From the specification of Danish patent no. 135,276 is known such a container, where below and outside the shoulder of the closure a ring-shaped protection member is mounted which surrounds the lower part of the shoulder thereby preventing the closure from being lifted off. When this container is to be opened, the protection member must be torn off the container, whereafter the closure can be removed. This ring-shaped member thus resembles a sealing of the container, and it need to be removed prior to removing the closure. The container is then without protection, and it will then be possible to remove the closure by an unintentional impact on the shoulder in an upwards direction, which may happen during handling and transportation of the container.

Add to this that the protection member is exposed to dirt when the container is being filled since any waste will flow over the container edge and down into the groove where it will settle.

It is the object of the invention to overcome these drawbacks of the known containers and at the same time to improve their useful qualities; this is achieved by a container where the round member has the shape of a buttress whose upper surface is outwardly and downwardly inclined from the outside of the container and which has a recess in order to give access to part of the lower side of the shoulder.

Hereby is achieved a protection buttress which remains fixed to the container and thus protects any fitted closure against being unintentionally removed, since any lifting off can only take place by lifting off the closure situated above the recess in the buttress. This protection will furthermore provide a permanent protection of the closure against any side impacts which will make the container resistant to any deformation from the side.

The buttress is furthermore designed in such a manner that the top side forms an inclined surface which will take any waste out and away from the side of the container without covering and soiling any text on the side of the container. Moreover, the buttress will protect the side of the container when used for

e.g. paint, since any waste occurring when brushing off the paint brush will flow across the rim and away from the side of the container.

If, as dealt with in claim 2, the outer part of the buttress is parallel to the side of the container, a sturdy edge protecting against any side impacts is achieved as well as a good support of the container, because the profile of the buttress will act as a double wall in the upper and most resilient part of the container.

Finally it is expedient, as dealt with in claim 3, to provide the buttress with ribs ensuring that the buttress remains at a specific distance from the container thereby obtaining the highest degree of rigidity in the upper area of the container.

In the following the invention will be described with reference to the drawing, wherein

fig. 1 is a top view of the container with closure on the left half and without closure on the right half,

fig. 2 is a side view of the corresponding container,

fig. 3 is an enlarged sectional view of the upper container part with closure seen seen along III-III in fig. 1,

fig. 4 is an enlarged sectional view of the same container without closure seen along IV-IV in fig. 1, and

fig. 5 is a top view of a section of the upper part of the container with recess.

The drawing shows an example of a preferred embodiment of a container according to the invention. In the shown example the container 1 consists of a base and with a side ending in a recess 6, from which a cylindrical upper rim extends to the upper edge of the container.

The top edge is plane and at its outer rim formed as a circumferential projection 8, as is clearly seen in fig. 4.

This projection 8 may engage in a corresponding groove 9 in a closure 2, when this is pressed in position over the container. The closure is made of an material with a resiliency so as to allow a deformation to take place at the same time as the groove squeezes around the projection following the placing of the closure. The closure consists of a plane centre part which at the rim forms a folded and downwardly open edge with the groove 9 engaging with the projection 8 of the container. This is clearly seen in fig. 3.

Farthest out the closure 2 ends in a circumferential shoulder 4 protruding a short distance from the side of the container, which makes it possible by hand or tool in a simple manner to lift off the closure by imposing a force upon the shoulder 4 in an upward direction.

A suitable distance down from the top of the container runs a cast-together circumferential buttress 3 which is downwardly and outwardly inclined and ends in a part being parallel to the container wall behind, cf. particularly fig. 3.

The buttress 3 is placed on the container in such a

manner that it covers the shoulder 4 of the closure when the closure is placed on the container.

The buttress 3 has a largest diameter being at least as large as that of the shoulder 4. This provides the optimum protection of the shoulder 4 and thus of the closure on the container.

In order to lift the closure from the container a recess 7 has been made in the buttress 3, as is seen in figs. 1, 2 and 5. The recess 7 gives access to the shoulder 4 and will not noticeably weaken the protection of the shoulder 4 by the buttress 3.

Below the buttress 3 are integrated ribs 5 extending radially at suitable intervals. The angle between the ribs 5 can be approximately  $7.5^\circ$ ; this may be varied according to dimension, material and requirements. The object of the integrated ribs 5 is to form a double wall exactly where the container is the most resilient. This design makes the container particularly rigid at the top and thus considerably easier to use. For instance, the container will not in its filled condition be nearly as oval when lifted in a handle, just as it becomes easier and more safe to pour from this container. The rigidity is so considerable that smaller material dimensions may be applied thereby considerably reducing the amount of expensive plastics required in order to produce the container.

As will moreover be seen from figs. 3 and 4, the buttress has the shape of a drip-nose in order that any waste will be led away from the wall of the container and protect this against dirt. This is another factor contributing to making this container

more safe since any text, such as warnings, will not be covered or indistinct.

#### Claims

1. Plastic container and closure therefor, whose outer rim has a resilient shoulder extending around the upper edge of the container, and which has an inner circumferential projection which can engage and squeeze around an outer circumferential projection on the upper edge of the container, and where a round member extends along the outside of the container below the shoulder, which member protrudes and covers the bottom side of the shoulder, characterized in that the round member has the shape of a buttress (3), whose top side is outwardly and downwardly inclined from the outer side of the container (1), and which buttress has a recess (7) to give access to part of the lower side of the shoulder (4).

2. Plastic container according to claim 1, characterized in that the outer part of the buttress (3) extends essentially parallel to the outer surface of the container (1).

3. Plastic container according to claims 1 and 2, characterized in that ribs (5) are provided below the buttress (3), which ribs connect the buttress (3) with the container (1).

FIG. 1

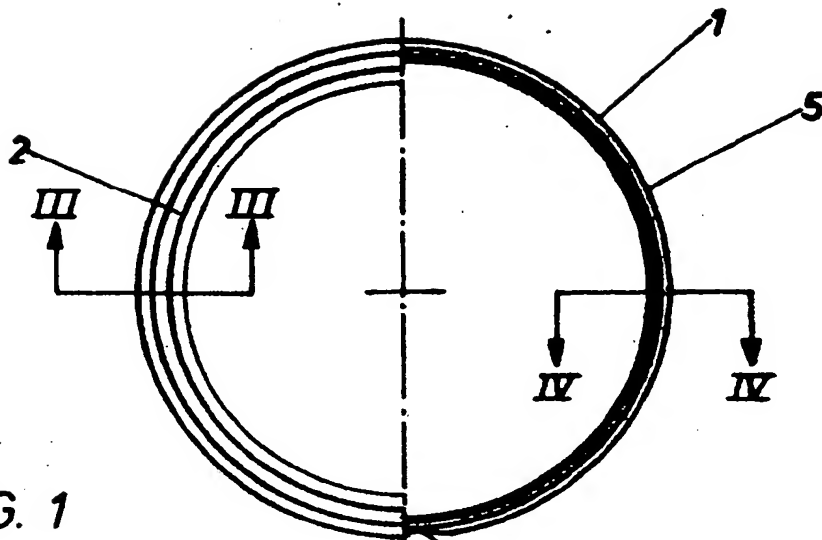


FIG. 2

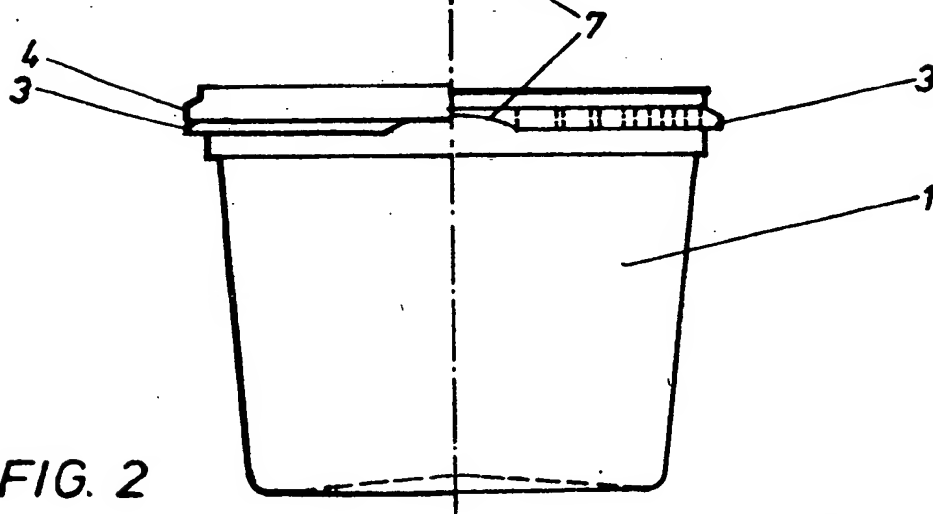


FIG. 3

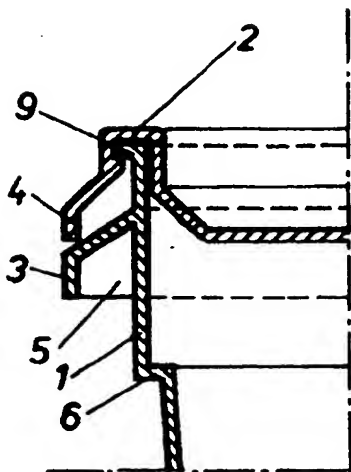


FIG. 4

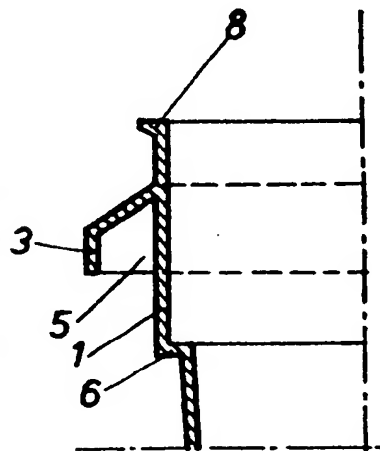
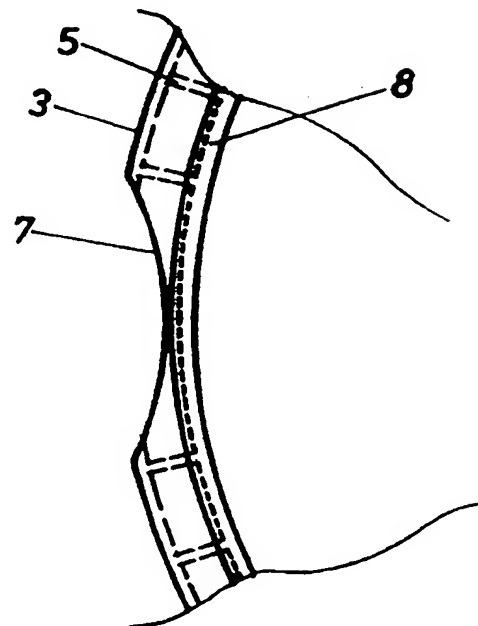


FIG. 5



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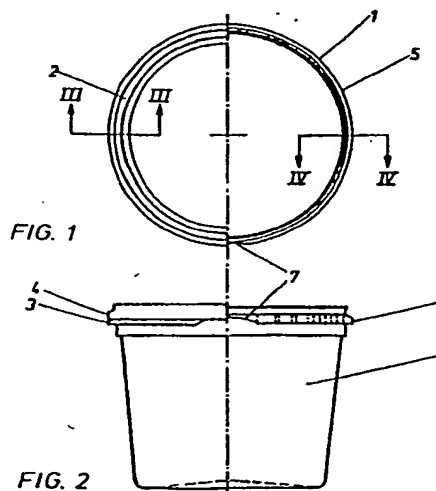
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European Patent  
Office

# EUROPEAN SEARCH REPORT

Application number

EP 86 85 0240

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
Y	GB-A-1 489 515 (ANDERSON) * Page 2, line 9 - page 2, line 64; figures 1-5 *	1-3	B 65 D 43/06
Y	--- FR-A-2 176 796 (VULCAN PLASTICS INC.) * Page 4, line 34 - page 6, line 29; page 7, lines 19-33; figures 1,2,4 *	1-3	
A	--- US-A-4 225 045 (RAYNER et al.) * Column 3, lines 20-24; column 3, line 61 - column 4, line 8; column 4, lines 28-39; figure 2 *	1	
A	--- FR-A-2 305 366 (DART INDUSTRIES INC.) * Page 2, line 26 - page 3, line 9; page 4, lines 9-37; figures 4-7 *	1	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	--- FR-A-2 079 213 (DART INDUSTRIES INC.) * Page 3, line 26 - page 4, line 28; figures 1-4 *	1	B 65 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18-06-1987	Examiner BELTZUNG F.C.
<b>CATEGORY OF CITED DOCUMENTS</b>			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

